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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of: Ken L. Chang, et al.

Serial No.: 10/633,145

Filed: 07/31/2003

For: STAMPED ACTUATOR ARM HAVING
LONGITUDINALLY SPACED-APART
STAMPED PROTRUSIONS FOR
SUPPORTING A TRACE SUSPENSION
FLEX

Art Unit: 2653

Examiner: Mark S. BLOUIN

Confirmation No.: 5429

Docket No.: K35A1301

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MAIL STOP AF
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicants request that the present application be reviewed under the provisions of the Pre-Appeal Brief Conference Pilot Program, as published in the Official Gazette of the United States Patent and Trademark Office of July 12, 2005, at Volume 1296 Number 2 and which was extended "until further notice" by Commissioner John Doll on January 10, 2006.

Applicants request Pre-Appeal Brief Review based on clear errors in Examiner's rejections. No amendments are being filed with this request. This request is being filed with a Notice of Appeal.

Clear Error #1: The claims and the prior art leave no room for the examiner to equate an “actuator arm” with a “suspension”.

Generally in disk drive technology, and specifically in this case, an “actuator arm” can not be considered as a subcomponent of a head gimbal assembly (HGA), and can not be considered to be equivalent to a “suspension.” The examiner committed clear error when he equated the two types of components (i.e. actuator arms and suspensions) in a disk drive context, and when he used them interchangeably in his claim rejections.

The protrusions 208, 210, 212 in the Budde App are clearly not a part of an “actuator arm,” as required by all of the presently pending claims. Rather the protrusions 208, 210, 212 in the Budde App protrude from a “base plate area” 202 of a “suspension” 200 (see e.g. paragraph [0028] of the Budde App). The Budde App considers the suspension 200 (including base plate area 202) to be separate and distinct from the actuator arms (called “track accessing arms”) 114. See, e.g., the first sentence of paragraph [0027] of the Budde App.

Likewise, the pending claims also separately recite the head gimbal assembly (HGA) and the actuator arm as different structures; one is not a part of the other. Accordingly, protrusions 208, 210, 212 in the Budde App can not be properly considered as part of an “actuator arm” in the context of the pending claims, and therefore can not anticipate the presently pending claims under §102(e).

Clear Error #2: Where is the base plate?

The presently pending claims specifically require that the HGA include a base plate component. Although the base plate area 202 of the Budde App may satisfy the pending claim requirement of a “base plate,” that can only be true if the base plate area 202 is properly considered to be part of an HGA. In that case, however, the protrusions 208, 210, 212 must be

properly understood to extend from a sub-component of an HGA, not from any separately-claimed and distinct “actuator arm.” Certainly both the pending claims and the Budde App rule out the possibility that the base plate be considered as part of the “actuator arm” (which is recited separately from the suspension / HGA in both applications). However, if the base plate area 202 in the Budde App is improperly construed to be part of the actuator arm 114 (rather than being properly construed as part of the HGA that includes suspension 112 and slider 110), then consistency would require Budde to also be understood to lack the teaching of an HGA that includes a base plate (as required by all of the pending claims).

Clear Error #3: There is ample evidence in the record that an actuator arm and a head suspension do NOT have the “same structure and function.”

An actuator arm and a head suspension most certainly do NOT have the “same structure and function” within a disk drive. The examiner’s statement to the contrary on page 4 of the office action is clearly erroneous.

The function of the suspension subcomponent of an HGA is well known in the disk drive industry: to be compliant and to function as a spring that allows the slider subcomponent to follow out-of-plane undulations of the moving disk surface. The Budde reference itself alludes to this function of a suspension in paragraph [0004]: “The spring force provided by the suspension is designed to allow the head to follow height variations on the surface of the medium without impacting the medium or moving too far away from the medium.”

On the contrary, the function of an actuator arm is to be non-compliant to out-of-plane disk surface undulations and to behave, as far as practically possible, as a rigid body. This function accords with the well-known purpose of an actuator arm to simply transfer the rotary motion of the voice coil motor into in-plane motion of the mounted HGAs, across the disk surface, for data track accessing and data track following.

The structure of a suspension accords with its function as a vertically compliant spring; suspensions invariably include a thin compliant spring area. The Budde reference itself alludes to this aspect of suspension structure in paragraphs [0004] and [0006], as follows: "Typically, a suspension includes three distinct areas: a base plate area that connects to the actuator arm, a spring area that provides a vertical spring force to bias the head toward the medium, and a load beam that extends from the spring area to the head/gimbal assembly. ...[T]he prior art has developed several techniques for forming a suspension so that the thickness of the spring area is less than the thickness of the load beam."

The structure of an actuator arm is very different and accords with its intended function to be non-compliant to out-of-plane disk surface undulations and to behave, as far as practically possible, as a rigid body. Specifically, the structure of an actuator arm is much thicker than that of a suspension, and (of course) actuator arm structures lack a compliant bend region. For example, Budde Figure 1 clearly shows that actuator arm 114 is much thicker than suspension 112. Also, Figure 3 of the present application clearly shows each of actuator arms 34,36 lacks a compliant bend region and is much thicker than each of the suspensions of HGAs 38, 40.

Those of ordinary skill in the art recognize the aforementioned significant differences in the structure and function of actuator arms versus head suspensions in the context of disk drive technology, and the examiner is erred in pretending that the distinction does not exist.

Clear Error #4: A "slider" can not be properly considered to be an HGA.

Mis-identifying a suspension to satisfy the claim requirement for an "actuator arm" leads the examiner to also mis-identify a slider to satisfy the claim requirement for a "head gimbal assembly" (HGA). However, a slider (which is the substrate of a magnetic recording head) can only be considered as a sub-component of an HGA; it can not be considered as an entire HGA.

The head gimbal assembly must also include a "gimbal" (which is a portion of the suspension sub-assembly). The examiner's position, that "slider" 110 in the Budde App could (alone) satisfy the explicit requirement for a head-gimbal assembly in the pending claims, is as erroneous as would be a position that a mere nut could (alone) satisfy an explicit requirement for a nut-bolt assembly. The examiner's position improperly and completely vitiates both the word "assembly" and the word "gimbal" from the claim language "head gimbal assembly." On the contrary, one of ordinary skill in the art would readily understand that the slider 110 of the Budde App must be a mere sub-component of a head-gimbal assembly (HGA).

Based at least on the errors identified and described above, applicants hereby request that the Review Panel deem the claim rejections to be improper and to require that they be withdrawn.

Respectfully submitted,

Date: 20FEB06

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